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Scinax nebulosus (Spix, 1824) (Amphibia: Hylidae): review of distribution and new record from Sergipe, Brazil

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Abstract: We present the first record of *Scinax nebulosus* for the State of Sergipe, in the Atlantic Forest, Brazil. *Scinax nebulosus* is a small hylid which inhabits the Amazon and Atlantic Forest. Its main microhabitat is temporary water bodies in tropical forests. This species can be recognized by the presence of many scattered glandules on the dorsal surface, especially on the head, upper eyelids and margins of the members. Some taxonomic studies and vocals records suggest careful evaluation of the taxonomic status of *S. nebulosus* along its geographical distribution.

Key words: *Scinax*, Atlantic Forest, State of Sergipe, Brazil

Figure 1. Live adult of *Scinax nebulosus* (Spix 1824) – LABEV A 859 (Photo by Rony P. S. Almeida).

Scinax nebulosus (Spix, 1824) is a small-bodied hylid of the Amazon and Brazilian Atlantic Forest that ranges from southeastern Venezuela, the Guianas and Suriname, through the Amazon Basin of Brazil (Amapá, Amazonas, Rondônia, Acre, Pará, Tocatins) to northern Bolivia, part of Brazil Central (Mato Grosso, Mato Grosso do Sul and Goiás) and northeastern Brazil (Maranhão, Ceará, Rio Grande do Norte, Paraíba, Pernambuco, Alagoas and Bahia) (La Marca et al. 2004) (Table 1). This species was previously recognized as *Hyla egleri* Lutz, 1968 and was synonymised with *H. nebulosa* and designated the holotype of the first name as the neotype for *Hyla nebulosa* with type locality to Belém, State of Pará, Brazil (Hoogmoed and Gruber 1983). Later, Duellman and Wiens (1992) revised the taxonomy of some hylids and recognized the genus *Scinax* Wagler, 1830.

On 28 January 2013 during a nocturnal active search, we captured two specimens of *Scinax nebulosus* (18.52 and 23.38 mm snout vent length (SVL)) (Figure 1) at a fragment of Atlantic Forest in Capela municipality in Refúgio de Vida Silvestre Mata do Junco (10°32′23″ S, 037°03′43″ W), State of Sergipe, Brazil (Figure 2) (collection permit: 161/04 - IBAMA/RAN). Specimens were housed in the amphibian collection of the Laboratório de Biologia e Ecologia de Vertebrados da Universidade Federal de Sergipe (LABEV A 859-860). *Scinax nebulosus* is a species without marked sexual characters, 22–23 mm snout to vent, can be recognized by the presence of many scattered glandules on the dorsal surface, especially on the head, upper eyelids, margins of the limbs, and sometimes on the edges of the spots, and interocular and sacral spots and dark dorsolateral areas are as inverted parentheses (Lutz 1973). The primary microhabitat of this species are temporary water bodies in tropical rainforest, also present in more open areas such as Cerrado moist savannah, as well as surviving to some extent in anthropogenic habitats, such as pastureland, secondary growth and rural gardens (La Marca et al. 2004). Comparisons of the vocals records of this species with others sympatric anurans of the same genus, suggest a need for careful evaluation of the taxonomic status of *S. nebulosus* along with its geographical distribution (Lima et al. 2004). Another study suggests that many or all specimens referred to

Table 1. Localities of *Scinax nebulosus* (Spix, 1824) with respective coordinates and references. All Datum not mentioned in original references were treated as WGS84.

Brazilian state (abbreviation)	Municipality	Collection site	Longitude	Latitude	Reference or acronym of the scientific collection and specimen number
SE	Capela	REVIS Mata do Junco	-37.0619	-010.5397*	This research
BA	Guaratinga	Fazenda Vista Bela	-39.7831	-016.5846**	Silvano and Pimenta 2003
BA	Canavieiras	Fazenda Monte Cristo	-38.9475	-015.6757**	Silvano and Pimenta 2003
AC	Tarauacá	Floresta Estadual do Mogno	-71.5355	-007.9440*	Pantoja and Fraga 2012
AC	Tarauacá	Floresta Estadual Rio Gregório	-71.1769	-008.0679*	Pantoja and Fraga 2012
AL	Ibateguara	Usina Serra Grande – Coimbra	-35.8333	-008.9833*	Carnaval 2002
AL	Campo Alegre	Fazenda Pindoba	-36.3508	-009.7819**	UNESPRC/CFBH 16341-45, 16353-54
AL	Passo de Camarajibe	not reported	-35.4933	-009.2383**	UNESPRC/CFBH 7541-47
AM	not reported	RDS Piagaçu-Purus	-61.6667	-004.0500*	Waldez et al. 2013
AM	not reported	RDS Piagaçu-Purus	-63.5000	-005.4167*	Waldez et al. 2013
AP	Macapá	Universidade Federal do Amapá	-51.0827	-000.0063*	Pereira-Júnior et al. 2013
CE	Planalto de Ibiapaba	not reported	-41.1667	-005.0000*	Loebmann and Haddad 2010
CE	Planalto de Ibiapaba	not reported	-40.7000	-003.3333*	Loebmann and Haddad 2010
CE	Ubajara	Saída da cidade	-40.9211	-003.8544**	UNESPRC/CFBH 15859-61
GO	Quirinópolis	not reported	-50.4517	-018.4483**	UNESPRC/CFBH 4604
MA	not reported	Pátio da Ferrovia CVRD	-47.3736	-004.9506*	Brasileiro et al. 2008
MA	not reported	Fazenda Três Lagoas	-47.1831	-004.7725*	Brasileiro et al. 2008
MA	not reported	Fazenda Maravilha	-47.4286	-006.0106*	Brasileiro et al. 2008
MA	not reported	Fazenda Jacuba	-47.3614	-006.2733*	Brasileiro et al. 2008
MA	not reported	Fazenda Nova	-47.3642	-006.3017*	Brasileiro et al. 2008
MA	not reported	Fazenda Ituaneira	-47.3928	-006.5303*	Brasileiro et al. 2008
MA	Caxias	not reported	-43.3562	-004.8596**	Damacesno et al. 2012
MA	Pedrinhas	Parque Ambiental da Alumar	-42.7350	-003.7794**	Barreto et al. 2011
MA	Açailândia	Pátio Compahia Vale do Rio Doce	-47.5047	-004.9467**	UNESPRC/CFBH 15626-27
MA	Alcântara	not reported	-44.4147	-002.4089**	UNESPRC/CFBH 19171-075
MA	Balsas	not reported	-46.0356	-007.5325**	UNESPRC/CFBH 14012-013
MA	Estreito	Fazenda Ouro Verde	-47.4511	-06.5606**	UNESPRC/CFBH 18039
MA	Imperatriz	not reported	-47.4917	-005.5264**	UNESPRC/CFBH 8122-23
MS	Corumbá	RPPN Acurizal	-56.7233	-018.7310*	UFMT/UFMT-A 2493-94
MT	Nova Monte Verde	not reported	-57.6344	-010.4283*	Ávila and Kawashita-Ribeiro 2011
MT	Nova Monte Verde	not reported	-57.6786	-010.3225*	Ávila and Kawashita-Ribeiro 2011
MT	Tangará da Serra	not reported	-57.5608	-014.6331*	Campos et al. 2013
MT	Alta Floresta	not reported	-56.0861	-009.8756**	UNESPRC/CFBH 21851
MT	Araputanga	PCH Ombreiras	-58.4572	-015.2558*	UFMT/UFMT-A 6977-078, 6981, 6983, 6987-88, 7005-06, 7011
MT	Aripuanã	Mineradora Geominas	-60.2631	-009.8603*	UFMT/UFMT-A 7836, 7842, 7846
MT	Brasnorte	PCH Bocaiúva	-57.9950	-012.4251*	UFMT/UFMT-A 10145-46
MT	Cáceres	ZPE de Cáceres	-57.8369	-016.5165*	UFMT/UFMT-A 1081-82
MT	Juína	Diagem Mineração	-59.3230	-011.5308*	UFMT/UFMT-A 6998, 7000-01
MT	Nova Bandeirantes	not reported	-57.8106	-009.8497**	UNESPRC/CFBH 21852
MT	Paranaíta	Margem do rio Teles Pires	-56.4767	-009.6647**	UNICAMP/ZUEC-AMP 16027, 16043-44
MT	Poconé	Morro do Carcará	-56.9485	-016.7845*	UFMT/UFMT-A 7053
MT	São Félix do Araguaia	Alto da Boa Vista	-50.6692	-011.6172*	UNICAMP/ZUEC-AMP 7490
MT	Tangará da Serra	Rio Sepotuba	-58.3104	-014.4346*	UFMT/UFMT-A 2270, 2283
PA	Brasil Novo	Private property next to Transamazônica road	-52.5761	-003.3762*	Oliveira et al. 2013
PA	Parauapebas	not reported	-49.9023	-006.0682**	Pinheiro et al. 2012
PA	Canaã dos Carajás	not reported	-49.8787	-006.4973**	Pinheiro et al. 2012
PA	Curionópolis	not reported	-49.5984	-006.1023**	Pinheiro et al. 2012
PA	Marabá	not reported	-49.1182	-005.3690**	Pinheiro et al. 2012
PA	São Félix do Xingu	not reported	-51.9951	-006.6451**	Pinheiro et al. 2012
PA	Altamira	Juruá	-52.2068	-003.2037**	Lima et al. 2004
PA	Belém	Museu Paraense Emílio Goeldi	-48.5045	-001.4562**	(Type locality) Hoogmoed and Gruber 1983
PA	Altamira	RESEX Riozinho do Anfrísio	-54.6551	-004.7594*	Barros 2011
PA	Tucuruí	ZPVS do Lago de Tucuruí	-49.2000	-003.7167*	Lima 2006
PA	Tucuruí	ZPVS do Lago de Tucuruí	-50.0000	-005.2500*	Lima 2006
PA	Vitória do Xingú	not reported	-51.7519	-003.2391*	Lima 2009
PA	Óbidos	Reserva Ecológica Grão Pará	-55.7285	-000.6303*	Avila-Pires et al. 2010
PA	Altamira	Acesso ao Acampamento Juruá	-52.2064	-003.2033*	UNICAMP/ZUEC-AMP 7240, 7253-54, 7331, 7395

Continued

Table 1. *Continued.*

Brazilian state (abbreviation)	Municipality	Collection site	Longitude	Latitude	Reference or acronym of the scientific collection and specimen number
PA	Bragança	not reported	-46.7492	-001.0483*	PUCRS/MCP-ANFIBIOS 12164, 12189
PA	Itaituba	Jardim do Ouro	-55.8953	-006.2656*	UFES/UFES-CTA 1991, 1992
PA	Oriximiná	Laudicas	-55.8661	-001.7655**	UNICAMP/ZUEC-AMP 17645-47
PB	João Pessoa	APP Mata do Buraquinho	-34.8650	-007.1450*	Santana et al. 2008
PB	Mamanguape	not reported	-35.1261	-6.8393**	Lutz 1973
PE	Cabo de Santo Agostinho	Compesa-Gurjau	-35.0333	-008.2333*	Carnaval 2002
PE	Caruaru	Brejo dos Cavalos	-36.0167	-008.3667*	Carnaval 2002
PE	Jaqueira	Usina Frei Caneca	-35.8333	-008.7167*	Carnaval 2002
PE	Timbaúba	Usina Cruangui, Água Azul	-35.3667	-007.6000*	Carnaval 2002
PE	Brejo Madre de Deus	Sítio Bituri	-36.4000	-008.2000*	Carnaval 2002
PI	Parnaíba	not reported	-41.7770	-002.9051**	Loebmann and Mai 2008
PI	Luiz Correia	not reported	-41.6658	-002.8836**	Loebmann and Mai 2008
RN	Macaíba	Escola Agrícola de Jundiaí	-35.3670	-005.8852*	Magalhães et al. 2013
RO	Jaraú	not reported	-62.4852	-010.4043*	Piatti et al. 2012
RO	Urupá	Sítio Boa Vontade	-62.2133	-011.0714*	Silva and Silva 2010
RO	Espigão do Oeste	Fazenda Jaburi	-60.7500	-011.6333*	Bernarde 2007
RO	Alto Alegre dos Parecis	Fazenda Santa Rita	-61.8506	-012.1281*	UFMT/UFMT-A 7811, 7813
RO	Espigão D'Oeste	Fazenda Jaburi	-61.0128	-011.5247**	UNESPRC/CFBH 5111-012
TO	Jalapão	not reported	-46.7500	-010.5503**	Sturaro et al. 2010
TO	Araguaína	Localidade P35	-48.2072	-007.1911**	UNESPRC/CFBH 11434
TO	Lizarda	Balneário	-46.6731	-009.5942**	UNESPRC/CFBH 13233
TO	Porto Nacional	Estrada da Fazenda Lazer	-48.4172	-010.7081**	UNESPRC/CFBH 16496-97
TO	São Félix do Tocantins	Fazenda Barrinha	-46.6594	-010.1683**	UNESPRC/CFBH 13245

*Exact geographical position; ** Not exact geographical position; Reserva Extrativista (RESEX); Refúgio de Vida Silvestre (REVIS); Área de Proteção Permanente (APP); Zonas de Preservação de Vida Silvestre (ZPVS); Universidade Estadual Paulista de Rio Claro (UNESPRC); Coleção de Anfíbios da UNESP, Celio Fenando Baptista Haddad (CFBH); Universidade Federal de Mato Grosso (UFMT); Universidade Federal do Espírito Santo (UFES); Universidade Estadual de Campinas (UNICAMP); Pontifícia Universidade Católica do Rio Grande do Sul (PUCRS).

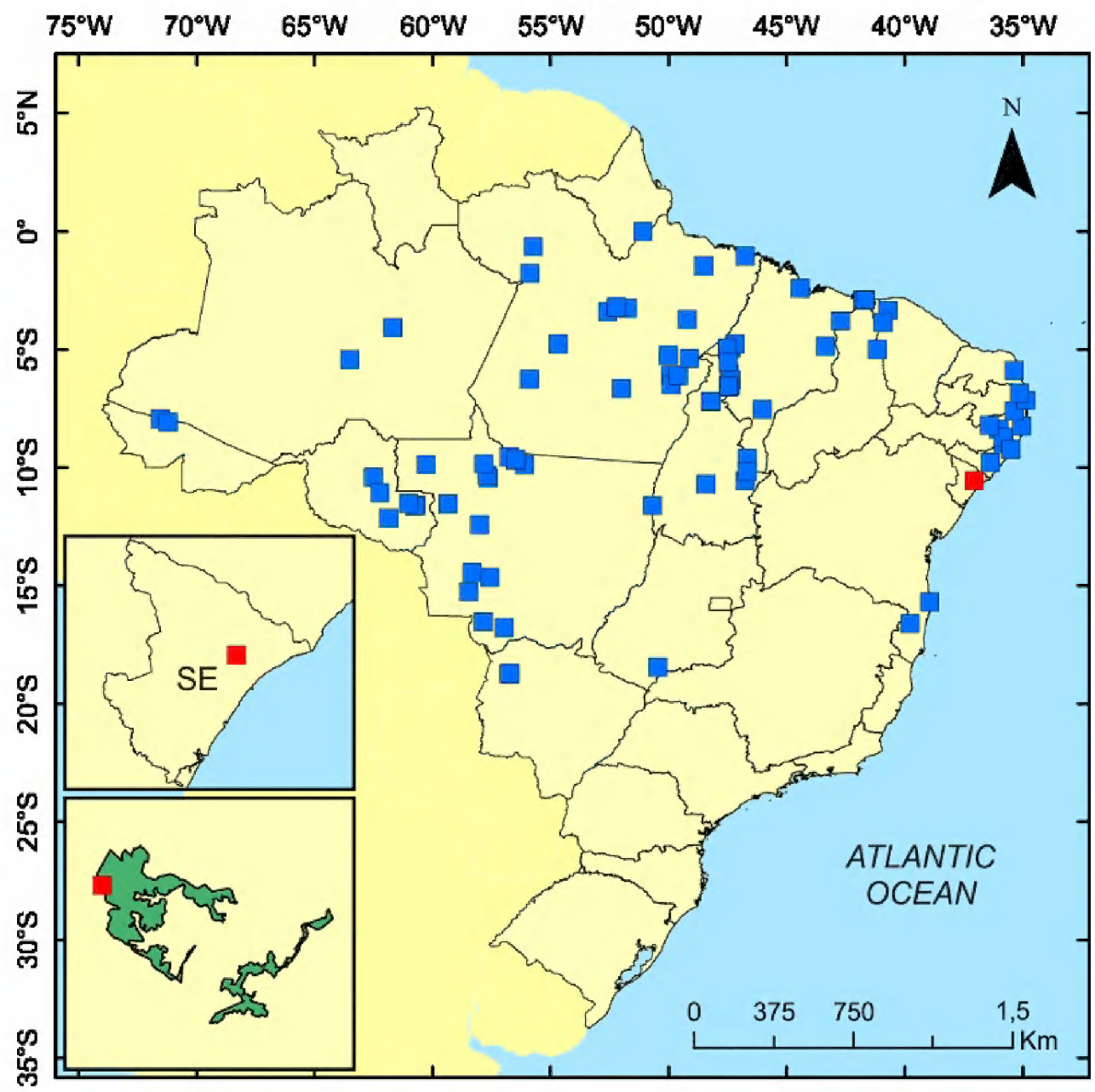

Figure 2. Known records of *Scinax nebulosus*, Brazil. BA: Bahia; SE: Sergipe; AL: Alagoas; PE: Pernambuco; PB: Paraíba; RN: Rio Grande do Norte; CE: Ceará; MA; Maranhão; PA: Pará; AP: Amapá; AM: Amazonas; RO: Rondônia; AC: Acre, MT: Mato Grosso; MS: Mato Grosso do Sul; GO: Goiás and TO: Tocantins. Blue square represent previously reported localities and red square represents the new record in Refugio de Vida Silvestre Mata do Junco, SE (map in green).

S. nebulosus from central and western Brazil and Bolivia in fact are *S. pedromedinae* (Hoogmoed and Avila-Pires 2011) and Lutz (1973) also suggested differences between the forms of the north and the northeastern. Thus, due these taxonomic uncertainties we also believe that the different populations throughout the geographic distribution (shown in this paper) can possibly be different taxonomic entities.

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